SHORT COMMUNICATIONS

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THE STATUS OF THE DESERT MONITOR *Varanus griseus caspius* (SQUAMATA: VARANIDAE) IN THE MANGISTAU REGION OF THE REPUBLIC OF KAZAKHSTAN AND SOME FEATURES OF THE PREIMAGINAL STAGES OF THE LONGHORN BEETLES *Neoplocaederus scapularis* (COLEOPTERA: CERAMBYCIDAE)

Mark V. Pestov,[1] Anna N. Gnetneva,[2] Aktan T. Mukhashov[3]

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This short report provides information on finding of cocoons of longhorn beetles (*Neoplocaederus scapularis*) from Ferula sp. in southern part of Mangistau Region of Republic of Kazakhstan. These cocoons according to size and shape looked very similar to the eggs of the desert monitor (*Varanus griseus caspius*). This record does not confirm the assumptions about distribution of the desert monitor in this region, based earlier on the erroneous identification of empty cocoon of *Neoplocaederus scapularis* as possible remnants of the egg of the monitor.

Keywords: Kazakhstan; Mangistau Region; desert monitor; *Varanus griseus caspius*; eggshell; cocoons of *Neoplocaederus scapularis*; Ferula sp.

The desert monitor is widely distributed in North Africa, in South-West Asia to Pakistan and India, and throughout Central Asia. Currently there are three subspecies that are recognized by scientists: *Varanus griseus koniecznyi* Mertens, 1942, *V. g. griseus* (Daudin, 1803) and *V. g. caspius* (Eichwald, 1831) (Bennett, 1995; Ananieva et al., 2004; Sindaco and Jeremčenko, 2008). *V. g. caspius* inhabits the territory from the southern and eastern coast of the Caspian Sea, to Afghanistan and Pakistan. The northern border of the distribution range of this species and its subspecies is found in Kazakhstan (Brushko, 1995; Sindaco and Jeremčenko, 2008).

The majority of the published research studies concerning the northwest border of *V. g. caspius* distribution in Kazakhstan and Central Asia states that the border lies along the Caspian coastline to the south of Kara-Bogaz-Gol Bay and the southern boundary of the Ustyurt plateau in northwestern Turkmenistan (Bannikov et al., 1977; Ananjeva et al., 2004; Sindaco, Jeremčenko, 2008). Accordingly, territories such as Ustyurt and Mangyshlak are usually not mentioned as the parts of distribution range for the desert monitor (Paraskiv, 1948, 1956; Brushko, 1995; Duysebaeva, 2009, 2012; Pestov and Nurmukhambetov, 2012).

However, several authors still do not exclude the possibility of a desert monitor occurrence in the southern part of the Mangistau region. For instance, in the report on the herpetofauna of the Aral-Caspian watershed, Kubykin and Plakhov (2012) mention the desert monitor as a species with an unidentified status. The observation provided by the authors is important for the discussion, therefore we will quote it verbatim: "The old shell of a single egg resembling an eggshell of a monitor is found on the footpath in the southern part of the Karynzharyk basin — the eastern side of the Shagalasor depression, in

[1] Protection Society of Amphibians and Reptiles under Ecological Center "Dront," Rozhdestvenskaya St. 16d, Nizhny Novgorod, 603001, Russia; e-mail: vipera@dront.ru

[2] Zoological Institute, Russian Academy of Sciences, Universitetskaya nab. 1, St. Petersburg, 199034, Russia; e-mail: an.gnetneva@yandex.ru

[3] Ustyurt Nature Reserve, Sportivnaya 7, 130200, Zhanaozen, Kazakhstan; e-mail: m.aktan@mail.ru

Fig. 1. Calcareous shells found in the Karynzharyk sands in the spring of 2016.

the vicinity of the Tushi-Chagall spring. On the one hand, it is possible that this eggshell belongs to a four-lined snake changed by the time. On the other hand, there is a high probability that this is a shell of a monitor's egg, because this part of the Karynzharyk depression (like Southern Ustyurt and the southern part of the Kenderli-Kayasan plateau) is the area closest to the northern parts of the range of the monitor in North -Western Turkmenistan" (Kubykin and Plakhov, 2012).

Furthermore, we need to mention the work where the authors include the entire territory of Ustyurt and Mangyshlak in the range of the desert monitor habitat region (Blank et al., 2013). However, we suggest that this conclusion is not reasonably justified.

During our own herpetological field research in Mangistau region (2010 – 2016), mainly in its southern part in the area of the Ustyurt State Nature Reserve in the Karynzharyk Basin, we were never able to detect any traces of the habitat of the desert monitor. Numerous interviews with local residents of the Karakiyansky district of the Mangistau region on the border with Turkmenistan and Uzbekistan, as well as with employees of the reserve, shepherds, and border guards, to whom we showed color photographs of the desert monitor, also did not yield positive results.

In April 2016, in the southern part of the Karynzharyk sands, in a small blowing basin in the upper half of a semi-fixed sand-dune covered with saxaul (*Haloxylon* sp.), juzgun (*Calligonum* sp.) and ferula (*Ferula* sp.), we found several oblong, slightly flattened calcareous shells resembling the eggs of the monitor. Some of them had almost no external damage (Fig. 1). The measurements of one of the undamaged objects were about 42 × 18 × 13 mm. The thickness of the shell is about 0.3 mm. The surface of the shells in one way or another was encrusted with adhered grains of sand. The presence of calcium carbonate in the shell was later confirmed by the rapid release of carbon dioxide in reaction with acetic acid.

Brushko (1995) provides the following proportions of the dry eggs of the monitor assembled on the surface of the substrate: 40 – 45 × 12 – 20 × 12 – 13 mm; thus, the shells that we found fit the dimensions of dry eggs of the monitor quite well. The eggs of the monitors, like the eggs of most lizards of other families, are covered with a soft leathery sheath that quickly hardens when exposed to

Fig. 2. Mummified larva of the longhorn beetles (*Neoplocaederus scapularis*) inside the calcareous cocoon.

Fig. 3. The longhorn beetles (*Neoplocaederus scapularis*) on the in florescence of the ferula (*Ferula* sp.).

air after laying eggs (Darevsky, 1985). However, it is likely that it might be difficult to distinguish the old, dried leathery shell of an egg from the old calcareous shell covered by grains of sand in the field conditions, especially when the size and shape are similar.

As it turned out, the objects we found are of completely different origin. Inside one of them we identified the characteristic fragments of the chitinous skeleton of the imago of the longhorn beetles *Neoplocaederus* (= *Plocaederus* Auct., Non J. Thomson, 1860) *scapularis* Fischer von Waldheim, 1821, and in the other, we found mummified remains of the longhorn beetles larva (Fig. 2). After consultations with entomological experts, we deduced that the objects we found were dead or abandoned cocoons (cradles) of *Neoplocaederus scapularis*, which ended up on the surface of the substrate as a result of wind erosion. This species of longhorn beetles is very common in May-June in the ferula plantation area in the Mangistau region; longhorn beetles can be easily found on the flowers of the ferula during the blossom season (Fig. 3).

The calcareous cocoons of the larvae of some longhorn beetles species (Coleoptera, Cerambycidae) are well known to specialists (Duffy, 1953; Danilevsky, 1988; Svacha and Lawrence, 2014). Moreover, there already have been incidents of false identification of fossilized beetle cocoons as fossil reptile eggs (Johnston et al., 1996).

Thus, it is probable that the eggshell described earlier in the Karynzharyk basin that was thought to belong to the desert monitor (Kubykin and Plakhov, 2012), was also in fact an empty cocoon of a longhorn beetle. Accordingly, this finding cannot be considered as a confirmation of the habitat possibility of a desert monitor in the southern part of the Mangistau region near the border with Turkmenistan. Our hypothesis was supported by Plakhov (one of the authors of this find and publication) in a personal conversation after the examination of our photographs of the cocoons of the longhorn beetles.

The set of previously published data, our own long-term observations, and the results of surveys of local residents indicate that the desert monitor is not currently found in Ustyurt and Mangyshlak within the Mangistau region of the Republic of Kazakhstan. Thus, the identification of the northern border of the desert monitor range is still actual. This is necessary to management of protection strategy for this rare and highly vulnerable species of reptiles listed in the Red Data Book of the Republic of Kazakhstan (2010).

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